DEFENSE INFORMATION SYSTEMS AGENCY
P. O. BOX 549
FORT MEADE, MARYLAND 20755-0549

IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **26 Mar 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of Cisco Unified MeetingPlace with Software Release 8.5.2

References: (a) DoD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (f), see Enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Cisco Unified MeetingPlace with Software Release 8.5.2 is hereinafter referred to as the System Under Test (SUT). The SUT met all the critical interoperability requirements for a Customer Premise Equipment (CPE) Meet Me Conference Bridge set forth in References (c) and (d). The SUT is an audio conferencing solution that provides the tools to setup, attend, and manage a meeting through a web browser, Telephony User Interface (TUI), and Microsoft Outlook Plugin for Cisco Unified MeetingPlace. The SUT is certified for joint use within the Defense Information System Network (DISN) only with the Cisco Unified Communications Manager (CUCM) Private Branch Exchange 1 (PBX 1) or Local Session Controller (LSC) Release 8.0(2) listed on Unified Capabilities (UC) Approved Products List (APL). The SUT meets the CPE Meet Me Conferencing Bridge requirements with any certified Assured Services Local Area Network (ASLAN) or ASLAN components on the UC APL. Testing was conducted using test procedures derived from Reference (e). No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that affect interoperability, but no later than three years from the date of UC APL memorandum.

3. This finding is based on interoperability testing, DISA adjudication of open test discrepancy reports (TDRs), review of the vendor's Letter of Compliance (LoC), and DISA Certification Authority (CA) positive recommendation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 14 through 18 November 2011. DISA adjudication of outstanding test discrepancy reports was completed on 13 March 2012. Review of the vendors LoC was completed on 7 March 2012. The DISA CA provided a positive Recommendation on 15 February 2012 based on the security testing completed by DISA-led IA test Teams and published in a separate report, Reference (f). Enclosure 2 documents the test results and describes the test network and system configurations

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are depicted in Table 1.

Table 1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Functional Requirements	Status	UCR Paragraph
IEEE 802.3u 100BaseT	Yes	Yes	Each Meet-Me Conference shall be capable of MLPP (C)	Met	5.2.12.3.5
			Each Meet-Me Conference shall be capable of establishing two separate bridges with each bridge having a capacity of 10 conferees each. (C)	Met	5.2.1.6.2
			All DSN CPE, as a minimum, must meet the requirements of Part 15 and Part 68 of the FCC Rules and Regulations, and the Administrative Council for Terminal Attachments (ACTA) (R)	Met	5.2.12.3.5
			Ethernet interface in accordance with IEEE 802.3-2002 (R)	Met	5.2.12.3.5
			Class of Service Markings	Partially Met[1]	5.3.1.3.3
	Yes	Yes[2]	Security (R)	Met	UCR 2008 Change 2, Section 5.4

NOTES:
1. The SUT Application Server does not meet full compliance of DSCP markings in accordance with the UCR. The SUT Application Server can tag various DSCP markings; however, it can not set a DSCP marking to any value from 0-63. In addition, the SUT Scheduling Server Operations and Management packets are set to a DSCP value of 0 (best effort) and can not be changed. These discrepancies were adjudicated by DISA as minor with the vendor's delivered Plan of Action and Milestones to fix by the end of March 2012, at which time the vendor will submit a request for verification and validation testing.
2. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).

LEGEND:

100BaseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	FCC	Federal Communications Commission
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	IEEE	Institute of Electrical and Electronics Engineers
		Mbps	Megabits per second
C	Conditional	MLPP	Multi-Level Precedence and Preemption
CPE	Customer Premises Equipment	R	Required
DISA	Defense Information Systems Agency	SUT	System Under Test
DSCP	Differentiated Services Code Point	UCR	Unified Capabilities Requirements
DSN	Defense Switched Network		

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet). Information related to DISN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.

6. The JITC point of contact is Edward Mellon, DSN 879-5159, commercial (520) 538-5159, FAX DSN 879-4347, or e-mail to edward.mellon@disa.mil. JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 1117401.

FOR THE COMMANDER:

2 Enclosures a/s

for BRADLEY A. CLARK
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Special Interoperability Test Certification of Cisco Unified MeetingPlace Software Release 8.5.2

Distribution (electronic mail):
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National Security Agency, DT
Defense Information Systems Agency, TEMC
Office of Assistant Secretary of Defense (NII)/DOD CIO
U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68
Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c) Defense Information Systems Agency, "Department of Defense Voice Networks Unified Capabilities Requirements (UCR)," December 2008

(d) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 2," 31 December 2010

(e) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006

(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Cisco Unified MeetingPlace Software Release 8.5.2 (Tracking Number 1117401)," 15 February 2012

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Cisco Unified MeetingPlace with Software Release 8.5.2; hereinafter referred to as the System Under Test (SUT).

2. PROPONENT. Headquarters United States Army Information Systems Engineering Command (HQUSAISEC).

3. PROGRAM MANAGERS. Mr. Jordan Silk, HQ USAISEC, ELIE-ISE-TI, Building 53302 Fort Huachuca, Arizona 85613, E-mail: Jordan.silk@us.army.mil.

4. TESTER. Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is an enterprise audio conferencing system. The SUT provides the tools to setup attend and manage meeting through a Web browser, Telephony User Interface (TUI), and Microsoft Outlook Plugin for Cisco Unified MeetingPlace. Users can Setup voice conferences from traditional telephones, Voice over Internet Protocol (VoIP) phones, Personal Computer-based communications clients and desktop and room based International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) H.323/H.320 systems. The SUT consists of the Unified MeetingPlace (MP) application Server and the Unified MP web scheduling server.

The Unified MeetingPlace Application Server is installed on the Cisco Unified Computing System (UCS) C 210 M2 series platform via VMware ESXi Enterprise plus. The Unified MeetingPlace Application Server consists of the Linux operating system and the IBM Informix Dynamic Server (IDS) database. The Unified MeetingPlace Application Server acts as the master component and ties the rest of the components together. The Unified MeetingPlace Application Server provides secure Session Initiation Protocol (SIP) connections to call processing devices such as the Cisco Unified Communications Manager (CUCM).

The Unified MeetingPlace Web Scheduling Server is installed on the Cisco UCS C 210 M2 series platform via VMware ESXi Enterprise plus. The Unified MeetingPlace Web Scheduling Server consists of the Windows 2003 Server operating system and the Structured Query Language (SQL) database. The Unified MeetingPlace Web Scheduling Server communicates with the Unified MeetingPlace Application Server using a Gateway System Integrity Module (GWSIM) protocol.

Management Workstations (site-provided) Windows XP. The workstation is used to access the virtual machines and allow administrators to access the application server to manage the system.

Management Workstations (site-provided) Windows Vista. The workstation is used to access the virtual machines and allow administrators to access the application server to manage the system.

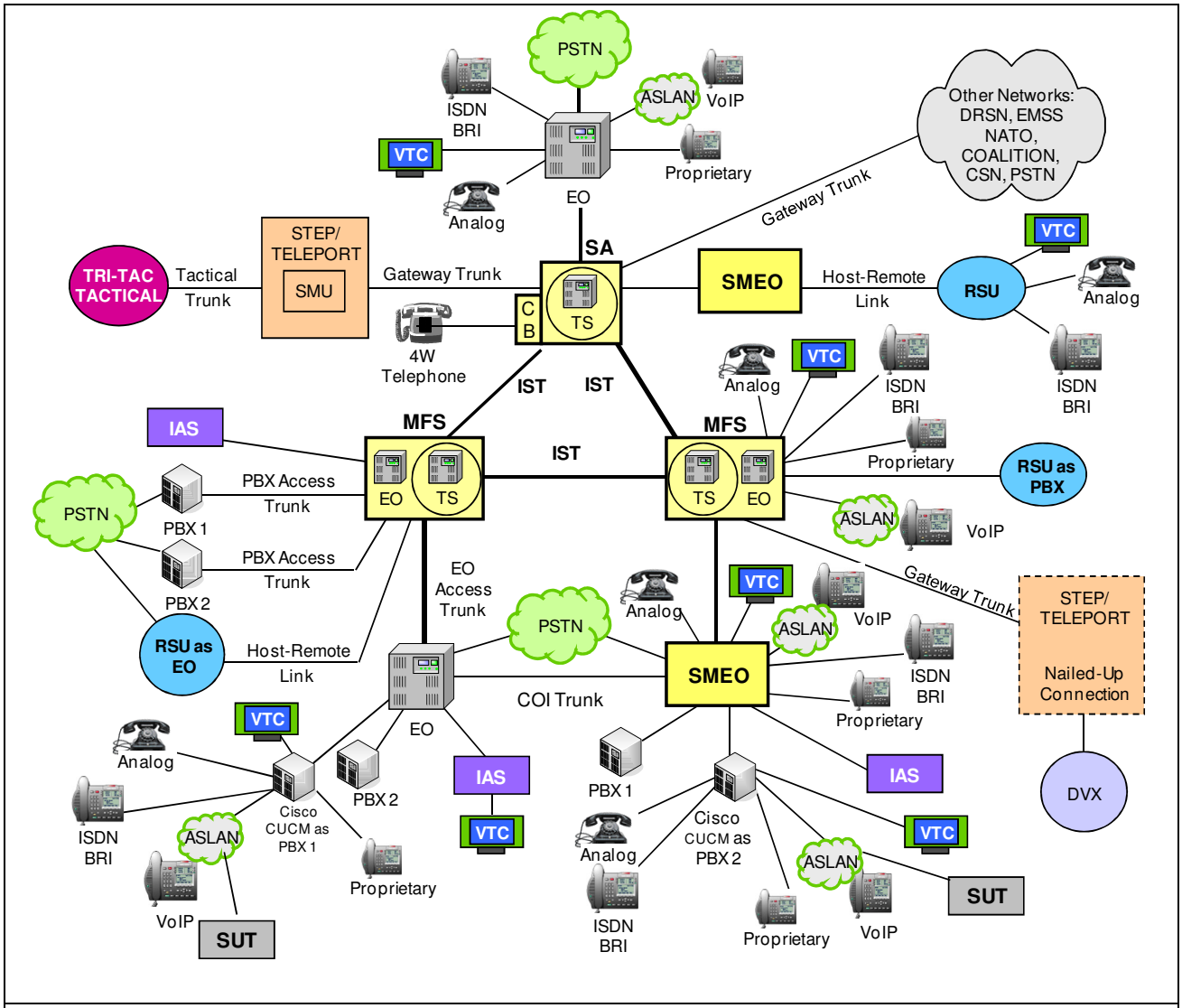
Management Workstations (site-provided) Windows 7. The workstation is used to access the virtual machines and allow administrators to access the application server to manage the system.

Client Workstations (site-provided) Windows XP. The client workstation is used to schedule audio conferences using web scheduling functionality or the outlook plug-in.

Client Workstations (site-provided) Windows Vista. The client workstation is used to schedule audio conferences using web scheduling functionality or the outlook plug-in.

Client Workstations (site-provided) Windows 7. The client workstation is used to schedule audio conferences using web scheduling functionality or the outlook plug-in.

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) Defense Switched Network (DSN) architecture in Figure 2-1 depicts the relationship of the SUT to the DSN switches.



LEGEND:

4W	4-Wire
ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CB	Channel Bank
CCM	Cisco Unified Communications Manager
COI	Community of Interest
CSN	Canadian Switch Network
DRSN	Defense Red Switch Network
DSN	Defense Switched Network
DVX	Deployable Voice Exchange
EMSS	Enhanced Mobile Satellite System
EO	End Office
IAS	Integrated Access Switch
ISDN	Integrated Services Digital Network
IST	Interswitch Trunk
MFS	Multifunction Switch
NATO	North Atlantic Treaty Organization
PBX	Private Branch Exchange
PBX 1	Private Branch Exchange 1
PBX 2	Private Branch Exchange 2
PRI	Primary Rate Interface
PSTN	Public Switched Telephone Network
RSU	Remote Switching Unit
SMEO	Small End Office
SMU	Switched Multiplex Unit
STEP	Standardized Tactical Entry Point
SUT	System Under Test
TDM/P	Time Division Multiplex/Packetized
Tri-Tac	Tri-Service Tactical Communications Program
TS	Tandem Switch
VALAN	Voice Application Local Area Network
VoIP	Voice over Internet Protocol
VTC	Video Teleconferencing

Figure 2-1. DSN Architecture

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in Table 2-1. These requirements are derived from the UCR Interface and Functional Requirements verified through JITC testing.

Table 2-1. SUT Functional Requirements and Interoperability Status

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2. Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).

LEGEND:

100BaseT	100 Mbps (Baseband Operation, Twisted Pair) Ethernet	DSN	Defense Switched Network
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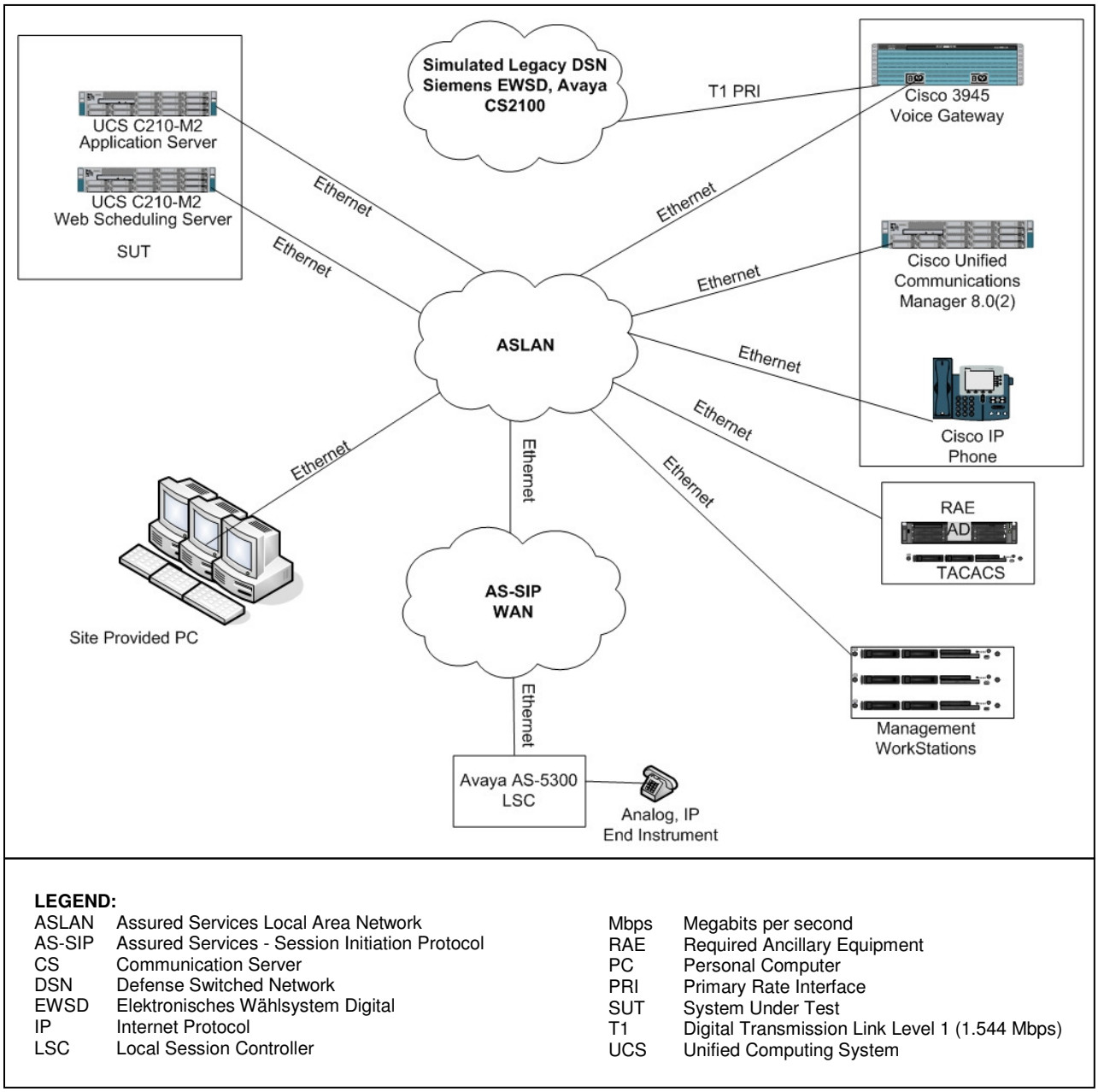
C	Conditional	IEEE	Institute of Electrical and Electronics Engineers
CPE	Customer Premises Equipment	Mbps	Megabits per second
DISA	Defense Information Systems Agency	MLPP	Multi-Level Precedence and Preemption
DSCP	Differentiated Services Code Point	R	Required
		SUT	System Under Test
		UCR	Unified Capabilities Requirements

8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility in a manner and configuration similar to that of the DSN operational environment. Testing the system's required functions and features was conducted using the test configuration depicted in Figure 2-2.



LEGEND:

ASLAN	Assured Services Local Area Network	Mbps	Megabits per second
AS-SIP	Assured Services - Session Initiation Protocol	RAE	Required Ancillary Equipment
CS	Communication Server	PC	Personal Computer
DSN	Defense Switched Network	PRI	Primary Rate Interface
EWSD	Elektronisches Wählsystem Digital	SUT	System Under Test
IP	Internet Protocol	T1	Digital Transmission Link Level 1 (1.544 Mbps)
LSC	Local Session Controller	UCS	Unified Computing System

Figure 2-2. SUT Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-2 provides the system configurations, hardware and software components tested with the SUT. The SUT was tested in an operationally realistic environment to determine interoperability with the Defense Information System Network (DISN) switches noted in Table 2-2. The DISN switches listed in Table 2-2 only depict the tested configuration. Table 2-2 is not intended to identify the only switches that are certified with the SUT. The SUT is certified with all CUCM Private Branch Exchange 1 (PBX 1) and Local Session Controller (LSC)

Release 8.0(2) switching systems listed on the Unified Capabilities (UC) Approved Products List (APL).

Table 2-2. Tested System Configuration

System Name	Hardware/Software Release		
Siemens EWSD	19d with Patch Set 46		
Avaya CS2100	Succession Enterprise (SE) 09.1		
Avaya AS5300 LSC	Version 2.0 with Patch Bundle 18		
Cisco Unified Communications Manager (LSC, PBX 1)	8.0(2) with Gateway IOS 15.1(1)T		
Required Ancillary Equipment (Site Provided)	Active Directory and TACACS		
Cisco Unified MeetingPlace Release 8.5.2	**Hardware**	**VMWare**	**Software/Firmware**
	UCS C210-M2	Application Server	ESXi 4.1
			MeetingPlace 8.5.2, Patch 2
		Web Scheduling Server	ESXi 4.1
			MS Windows Server 2003 SE SP2
			MeetingPlace Scheduler, 8.5.2 Patch 2
	Management Workstation (site-provided)	NA	MS Windows 7 Pro v6.1, Build 7601 SP1
			MS Outlook 2010
	Management Workstation (site-provided)	NA	Microsoft Windows Vista SP2
			MS Outlook 2010

LEGEND:

CAC	Common Access Card	PBX 1	Private Branch Exchange 1
CS	Communication Server	SP	Service Pack
EWSD	Elektronisches Wählsystem Digital	SSH	Secure Shell
IOS	Internetwork Operating System	TACACS	Terminal Access Control Authentication Server
LSC	Local Session Controller	UCS	Unified Computing System
NA	Not Applicable		

10. TEST LIMITATIONS. None

11. TEST RESULTS

a. Discussion. Inter-switch and intra-switch calls were placed to the SUT to test meet-me conference server interaction with Multi-Level Precedence and Preemption (MLPP). Inter-switch test calls were originated from legacy switches (Siemens EWSD and the Avaya CS2100) over Digital Transmission Link Level 1 (T1) Primary Rate Interface (PRI) circuits and a UC LSC (Avaya Aura AS-5300) via Assured Services Session Initiation Protocol (AS-SIP) as depicted in Figure 2-2.

(1) The SUT was tested and met the following FRs for Meet-Me Conferencing as described in UCR paragraph 5.2.12.3.5:

(a) Each Meet-Me conference bridge shall be fully capable of MLPP access and control as described in Paragraph 5.2.1.6.2:

(b) When a precedence call above Routine is placed to a Meet-Me conference bridge that is activated with no remaining idle resources, the switch shall conduct a preemptive search to determine the lowest active resource on the bridge, and the remaining resource shall receive a Precedence Notification Tone (PNT) and be preempted. All remaining conferees on the bridge shall receive a conference disconnect tone.

The following tests were conducted to insure that the SUT properly interacted with MLPP as required in the UCR.

(1) Conferences were set up using a VoIP phone, Web access and Outlook Plug-in. After a conference was set up, an email with the time of the conference, conference ID, and password was sent to all of the participants.

(2) Intra-switch and inter-switch calls were placed to the SUT at all precedence levels.

(3) Higher precedence intra-switch and inter-switch calls placed to the SUT preempted the lowest active conferee which received the proper PNT. The remaining conferees received a proper conference disconnect tone and voice letting the other conferee know who is leaving the conference.

(4) ROUTINE intra-switch and inter-switch calls placed to the SUT received a proper busy tone.

(5) Equal or lower precedence intra-switch and inter-switch calls above ROUTINE were placed to the SUT and the caller received the proper Blocked Precedence Announcement.

(6) In accordance with the UCR 2008, section 5.2.12.3.5, all DSN Customer Premises Equipment (CPE), as a minimum, must meet the requirements of Part 15 and Part 68 of the FCC Rules and Regulations, and the Administrative Council for Terminal Attachments (ACTA). This requirement was met by vendor's Letter of Compliance.

(7) In accordance with the UCR 2008, section 5.3.1.3.3, the End instrument (EI) devices shall meet the following requirements: All EI components shall be capable of implementing Service Class tagging using the 6-bit Differentiated Services Code Point (DSCP) field in the IP Header. The DSCP shall be assigned to any distinct service class that originate or traverses the EI. The SUT partially met this requirement because the SUT Scheduling Server and the Application Server do not tag the Operations, Administration and Management (OA&M) packets with the appropriate DSCP tag nor can the DSCP value be changed. Instead the DSCP tag is hardset to zero (best effort). This discrepancy was adjudicated by DISA as having a minor operational impact with the vendor's delivered Plan of Action and Milestone to fix by end

of March 2012, at which time the vendor will submit via the Unified Capabilities Certification Office a request for verification and validation test to demonstrate the fix.

c. Test Summary. The SUT met the critical interoperability requirements for a CPE Meet Me Conference Bridge and is certified for joint use within the DISN. The SUT is certified for joint use within the DISN specifically with the PBX 1 or LSC Release 8.0(2) listed on UC APL. The SUT meets the CPE Meet Me Conferencing Bridge requirements with any certified ASLAN or ASLAN components on the Unified UC APL.

12. TEST AND ANALYSIS REPORT. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet). Information related to DISN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.